



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
16.06.1999 Bulletin 1999/24

(51) Int Cl.⁶: **B01J 10/00, C08F 8/00**

(43) Date of publication A2:
07.01.1998 Bulletin 1998/02

(21) Application number: **97202753.6**

(22) Date of filing: **14.06.1995**

(84) Designated Contracting States:
BE DE ES FR GB IT NL

(30) Priority: **17.06.1994 US 261560**

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
95925254.5 / 0 765 348

(71) Applicant: **Infineum USA L.P.**
Linden, New Jersey 07036 (US)

(72) Inventors:
• **Gorda, Keith R.**
Little York, New Jersey 08834 (US)
• **Margo, Harold Wilbur**
Colonia, New Jersey 07067 (US)
• **Koros, Robert Martin**
Westfield, New Jersey 07090 (US)
• **Stanat, Jon Edmond**
Chester, New Jersey 07930 (US)

- **Cross, William**
Scotch Plains, New Jersey 07076 (US)
- **Dankworth, David C.**
Whitehouse Station, New Jersey 08889 (US)
- **Eckstrom, William B.**
Fanwood, New Jersey 07023 (US)
- **Cusumano, Joseph V**
Watchung, New Jersey 07060 (US)
- **Diana, William D.**
Collegeville, Pennsylvania 19426 (US)
- **Emert, Jacob I.**
Brooklyn, New York 11218 (US)

(74) Representative: **Mansell, Keith Rodney**
Infineum UK Ltd,
Law Department,
Milton Hill,
PO Box 1
Abingdon, Oxfordshire OX13 6BB (GB)

(54) **Process for reacting a liquid with a gas**

(57) A process for reacting a liquid with a gas in a
gas-liquid pipe reactor which is operated in laminar flow

with a Reynolds number less than 10 and which con-
tains a static mixer to disperse the gas into the liquid for
reaction.



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 20 2753

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	GB 1 286 043 A (METALLGESELLSCHAFT AG) 16 August 1972 * claims 1-11; figures 1,3 * ---	1	B01J10/00 C08F8/00
A	EP 0 495 418 A (UREA CASALE S.A.) 22 July 1992 * claims 1-6 * ---	1	
A	FR 2 101 485 A (BRIDGESTONE TIRE CO., LTD.) 31 March 1972 * claims 1-7 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B01J C08F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 April 1999	Examiner Permentier, W
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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21-04-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1286043 A	16-08-1972	NL 6918883 A,B,	18-06-1971
EP 495418 A	22-07-1992	AT 159245 T	15-11-1997
		CA 2059362 A	16-07-1992
		CN 1071160 A	21-04-1993
		DE 69222665 D	20-11-1997
		DE 69222665 T	07-05-1998
		ES 2110449 T	16-02-1998
		RU 2078761 C	10-05-1997
		US 5304353 A	19-04-1994
		US 5847208 A	08-12-1998
FR 2101485 A	31-03-1972	JP 49017033 B	26-04-1974
		CA 944887 A	02-04-1974
		DE 2129336 A	23-12-1971
		GB 1343447 A	10-01-1974